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PATTERNS OF CONVECTIVE PROPERTIES IN THE TROPICS

A. Vogelmann, E. Luke, M. Jensen, and P. Kollias
Brookhaven National Laboratory
Upton, NY

Erwin Boer
LUEBEC

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Brookhaven National Laboratory
P.O. Box 5000
Upton, NY 11973-5000
www.bnl.gov

ABSTRACT

To aid in improving model parameterizations of convection, we examine how cloud macroscale characteristics and microphysical properties retrieved at the ARM Tropical Western Pacific (TWP) sites depend on cloud type and the stage of the cloud life cycle. We determine the life cycle stage using a version of the Boer and Ramanathan (1997) satellite cloud-tracking algorithm that we have enhanced by adding neural network analysis of cloud texture features to the identification procedure. These observations will provide the context for microphysical analyses that combine the spectral capabilities of the MMCR and C-POL radars. Specifically, we focus on the Darwin ARM site where a new MMCR spectral processor has been installed that enables improved cloud masking, characterization and microphysical retrievals. Those vertical profiles may be augmented using the 3-D scanning information from the Australian BOM C-POL radar, stationed near Darwin to identify where the vertical profiles fall within the cloud systems.